

Appl. No. 10/533,604
 Response to Non-Final Office Action dated February 26, 2009

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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Amendments to the Claims:

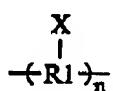
This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-17 (canceled).

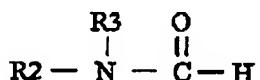
Claim 18 (previously presented): A proton conductor, including an impregnated complex composed of:

a first compound having a first structural part having a first formula:



where R1 represents a component including carbon, X represents a protoic dissociation group, and $n \geq 1$; and

a second compound having a second structural part having a second formula:



where R2 and R3 represent a component including carbon or hydrogen, respectively, wherein a number of moles of the first compound is a, a number of moles of the second compound is b, and a ratio of the number of moles b to the number of moles of the protoic dissociation group ($a \times n$) is greater than or equal to 10 and less than or equal to 30,

wherein the first compound is a film into which the second compound is impregnated.

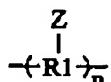
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Claim 19 (previously presented): A proton conductor according to claim 18, wherein the second compound includes at least one of N, N-dimethyl formamide and N-methyl formamide.

Claim 20 (canceled).

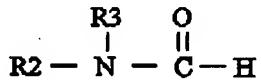
Claim 21 (previously presented): A proton conductor according to claim 18, wherein the protoic dissociation group is at least one of a -SO₃H group, a -COOH group, and a -OH group.

Claim 22 (withdrawn): A single ion conductor, including:
a first compound having a first structural part having a first formula:



where R₁ represents a component including carbon, Z represents a cationic dissociation group, and n ≥ 1; and

a second compound having a second structural part having a second formula:



where R₂ and R₃ represent a component including carbon or hydrogen, respectively.

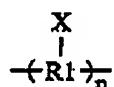
Claim 23 (withdrawn): A single ion conductor according to claim 22, wherein the second compound includes at least one of N, N-dimethyl formamide and N-methyl formamide.

Claim 24 (withdrawn): A single ion conductor according to claim 22, wherein where the number of moles of the first compound is c, and a number of moles of the second compound is b, a ratio of the number of moles b to the number of moles of the cationic dissociation group (c×n) is in a range of 10 ≤ b/(c×n) ≤ 30.

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Claim 25 (withdrawn): A single ion conductor according to claim 22, wherein the cationic dissociation group is at least one of a $-SO_3M$ group, a $-COOM$ group, and a $-OM$ group where M is selected from the group consisting of lithium, sodium, potassium, and rubidium.

Claim 26 (withdrawn): A method of manufacturing a proton conductor, the method comprising impregnating a first compound having a first structural part having a first formula into a second compound or a solution thereof in a solvent, the second compound having a second structural part having a second formula, where the first formula and the second formula are as follows, respectfully:



where R_1 represents a component including carbon, X represents a protic dissociation group, and n is in a range of $n \geq 1$, and



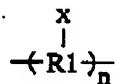
where R_2 and R_3 represent a component including carbon or hydrogen, respectively.

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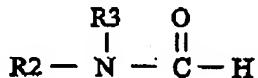
Claim 27 (withdrawn): A method of manufacturing a proton conductor, the method comprising mixing at least one of a first compound having a first structural part having a first formula and a second compound having a second structural part having a second formula and a third compound having a third structural part having a third formula in a solvent and evaporating the solvent, where the first formula, the second formula, and the third formula are as follows, respectfully.



where R1 represents a component including carbon, X represents a protic dissociation group, and n is in a range of $n \geq 1$;



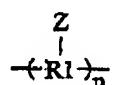
where R1 represents a component including carbon, x represents a group capable of becoming a protic dissociation group by ion exchange, and n is in a range of $n \geq 1$; and



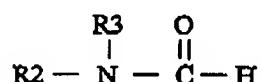
where R2 and R3 represent a component including carbon or hydrogen, respectively.

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Claim 28 (withdrawn): A method of manufacturing a single ion conductor, the method comprising impregnating a first compound having a first structural part having a first formula into a second compound or solution thereof in a solvent, the second compound having a second structural part having a second formula, where the first formula and the second formula are as follows, respectfully:



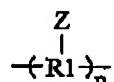
where R1 represents a component including carbon, Z represents a cationic dissociation group, and n is in a range of $n \geq 1$; and



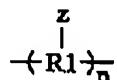
where R2 and R3 represent a component including carbon or hydrogen, respectively.

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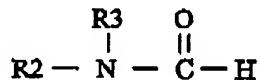
Claim 29 (withdrawn): A method of manufacturing a single ion conductor, the method comprising mixing at least one of a first compound having a first structural part having a first formula and a second compound having a second structural part having a second formula and a third compound having a third structural part having a third formula in a solvent and evaporating the solvent, where the first formula, the second formula and the third formula are as follows, respectfully:



where R1 represents a component including carbon, Z represents a cationic dissociation group, and n is in a range of $n \geq 1$;



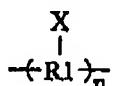
where R1 represents a component including carbon, z represents a group capable of becoming a cationic dissociation group by ion exchange, and n is in a range of $n \geq 1$; and



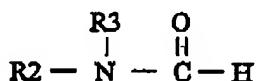
where R2 and R3 represent a component including carbon or hydrogen, respectively.

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Claim 30 (withdrawn): An electrochemical capacitor having a capacitance between a pair of electrodes opposed with an electrolyte therebetween, wherein the electrolyte includes a first compound having a first structural part and a second compound having a second structural part having a second formula, where the first formula and the second formula are as follows, respectfully:



where R1 represents a component including carbon, X represents a protic dissociation group, and n is in a range of $n \geq 1$; and



where R2 and R3 represent a component including carbon or hydrogen, respectively.

Claim 31 (withdrawn): An electrochemical capacitor according to claim 30, wherein the second compound includes at least one of N, N-dimethyl formamide and N-methyl formamide.

Claim 32 (withdrawn): An electrochemical capacitor according to claim 30, wherein where a number of moles of the first compound is a, and a number of moles of the second compound is b, a ratio of the number of moles b to the number of moles of the protic dissociation group ($a \times n$) is in a range of $10 \leq b/(a \times n) \leq 30$.

Claim 33 (withdrawn): An electrochemical capacitor according to claim 30, wherein the protic dissociation group is at least one of a $-\text{SO}_3\text{H}$ group, a $-\text{COOH}$ group, and a $-\text{OH}$ group.

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Claim 34 (withdrawn): An electrochemical capacitor according to claim 30, having a pseudo capacity expressed as a derived function $d(\Delta q)/d(\Delta v)$ between a magnitude of an electrical charge (Δq) and a magnitude of an electrical change (Δv), in addition to the capacitance between the pair of electrodes.

Claim 35 (new): A proton conductor according to claim 18, wherein upon application of an electric field, the =NCOH group of the second compound interacts with the protoic dissociation group and causes a proton of the protoic dissociation group to dissociate from the first compound.